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## Novelties in Chinese *Populus* and *Salix* (Salicaceae)

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**ABSTRACT.** *Populus wexianica* Z. C. Feng & J. L. Guo ex G. Zhu and *Salix suchowensis* Cheng ex G. Zhu are validly published here by the designation of holotypes. Nine new combinations, *Salix alfredii* Görz ex Rehder & Kobuski var. *fengxianica* (N. Chao) G. Zhu, *S. eriostachya* Wallich ex Andersson var. *lineariloba* (N. Chao) G. Zhu, *S. fargesii* Burkill var. *kansuensis* (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, *S. nipponica* Franchet & Savatier var. *mengshanensis* (S. B. Liang) G. Zhu, *S. opsimantha* C. K. Schneider var. *wawashanica* (Mao & P. X. He) G. Zhu, *S. oritrepha* C. K. Schneider var. *amnematchinensis* (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, *S. sinica* (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, *S. sinica* var. *dentata* (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, and *S. sinica* var. *sessilis* (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu are proposed. *Salix hylonoma* C. K. Schneider var. *liocarpa* (Görz) G. Zhu and *S. spodiophylla* Handel-Mazzetti var. *liocarpa* (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu are new statuses and combinations.

For the treatment of the Salicaceae in the *Flora of China*, valid publication of two species is needed; nine new combinations are also required; and two forms need to be raised to varietal rank. All are accomplished here.

***Populus wexianica*** Z. C. Feng & J. L. Guo ex G. Zhu, sp. nov. TYPE: China. Gansu: Wexian, Zhongzhai, *J. F. Liu 88001* (holotype, GAUF).

This species is based on *Populus wexianica* Z. C. Feng & J. L. Guo, which was incompletely described in *Acta Botanica Boreali-Occidentalia Sinica* (Feng & Guo, 1990: 132). These authors neglected to select an item among the four cited specimens to typify this name. According to the *International Code of Botanical Nomenclature* (Greuter et al., 1994, Articles 8.1 and 37.1), a name of a taxon published after 1958 must have a single-element type cited in order to be valid. Therefore, by the designation of a holotype, the valid publication of the name is achieved here.

The four specimens cited by Feng and Guo are

from the same locality of Zhongzhai in Wexian, Gansu, China: *J. L. Guo 88008* (♀ inflorescence), *J. F. Liu 88001* (♂ inflorescence), *J. L. Guo 89003* (infructescence), and *J. L. Guo 88012* (infructescence). One of the key characters differentiating this species from its close relative, *P. gansuensis* C. Wang & H. L. Yang, is its many stamens, which are present on the specimen *J. F. Liu 88001*. Therefore, *J. F. Liu 88001* is designated here as the holotype of *P. wexianica*.

***Salix alfredii*** Görz ex Rehder & Kobuski var. ***fengxianica*** (N. Chao) G. Zhu, comb. nov. Basionym: *Salix fengxianica* N. Chao, *Acta Bot. Bor.-Occid. Sin.* 5(2): 115. 1985. TYPE: China. Shaanxi: Fengxian County, *Jinhua He 2396* (holotype, NWFC).

This variety differs from variety *alfredii* only in having glabrous ovaries.

***Salix eriostachya*** Wallich ex Andersson var. ***lineariloba*** (N. Chao) G. Zhu, comb. nov. Basionym: *Salix dolia* C. K. Schneider var. *lineariloba* N. Chao, *Bull. Forest. Pl. Res.* 3: 4. 1985. TYPE: China. Sichuan: Jiulong, *Neng Chao 3788* (holotype, SCFI).

This variety differs from *Salix eriostachya* var. *eriostachya* only in having a smaller bract, shorter peduncle, and a more or less stipitate ovary, but it is distinguished sharply from *S. dolia* C. K. Schneider by having a deeply bilobed style and stigmas.

***Salix fargesii*** Burkill var. ***kansuensis*** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, comb. nov. Basionym: *Salix kansuensis* K. S. Hao ex C. F. Fang & Skvortsov, *Novon* 8: 468. 1998. TYPE: China. Gansu: Wutu County, Lan Shan, 2500 m, *K. S. Hao 462* (holotype, PE).

This variety differs from variety *fargesii* in having glabrous ovaries and capsules. However, specimens of variety *fargesii* sometimes also have pilose ovaries. The variety *kansuensis* may be just a synonym of variety *fargesii*.

**Salix hylonoma** C. K. Schneider var. **liocarpa** (Görz) G. Zhu, stat. nov. Basionym: *Salix hylonoma* Schneider f. *liocarpa* Görz, Bull. Fan Mem. Inst. Biol. (Bot.) 6(1): 17. 1935. TYPE: China. Sichuan: Wang 301 (holotype, ?PE).

This variety differs from variety *hylonoma* in having glabrous ovaries.

**Salix nipponica** Franchet & Savatier var. **mengshanensis** (S. B. Liang) G. Zhu, comb. nov. Basionym: *Salix triandra* L. var. *mengshanensis* S. B. Liang, Bull. Bot. Res., Harbin 8(2): 63. 1988. TYPE: China. Shandong: Mengyin County, Mengshan, S. B. Liang 86005 (holotype, SDFS).

The European species *Salix triandra* is currently accepted as not occurring in China (C. F. Fang & A. Skvortsov, pers. comm.). Its inclusion in the *Flora Reipublicae Popularis Sinicae* (Wang & Fang, 1984) was due to the misidentification of some specimens of *S. nipponica*, which differs from *S. triandra* in having whitish powder on the second-year branches. Based on its description (Liang, 1988), this variety is more properly placed under *S. nipponica* and differs from variety *nipponica* in having long whitish hairs on buds and new branches and female flowers without a dorsal gland.

**Salix opsimantha** C. K. Schneider var. **wawashanica** (Mao & P. X. He) G. Zhu, comb. nov. Basionym: *Salix oreinoma* Schneider var. *wawashanica* Mao & P. X. He, Acta Bot. Yunnan. 9(1): 47. 1987. TYPE: China. Yunnan: Jingdong County, North Wawashan, 2300 m, Anquan Wu 9345 (holotype, KUN).

In the *Flora Reipublicae Popularis Sinicae* (Wang & Fang, 1984), the species described under *Salix oreinoma* C. K. Schneider is, in fact, *S. opsimantha* C. K. Schneider, and vice versa (C. F. Fang & A. Skvortsov, pers. comm.). The illustration captioned *S. oreinoma* on plate 54 of the *Flora* depicts *S. opsimantha*. *Salix oreinoma* C. K. Schneider var. *wawashanica* Mao & P. X. He was described under the wrong species because of the error in the *Flora* (Mao & Li, 1987) and should therefore be a variety of *S. opsimantha*.

**Salix oritrepha** C. K. Schneider var. **amnematchinensis** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, comb. nov. Basionym: *Salix amnematchinensis* K. S. Hao ex C. F. Fang & Skvortsov, Novon 8: 467. 1998. TYPE: China. Qinghai: Gan Ba, 4500 m, K. S. Hao 1039 (holotype, PE).

This variety differs from variety *oritrepha* only in having elliptic-ovate or elliptic-lanceolate leaves. Leaves of variety *oritrepha* are often elliptic or ovate.

**Salix sinica** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, comb. nov. Basionym: *Salix caprea* L. var. *sinica* K. S. Hao ex C. F. Fang & Skvortsov, Novon 8: 467. 1998. TYPE: China. Hebei: Wuliang Shan, 1270 m, K. M. Liu 49 (holotype, PE).

This variety is based on *Salix caprea* L. var. *sinica* K. S. Hao, described among many other taxa without Latin diagnoses in the well-known "Synopsis of Chinese *Salix*" (Hao, 1936), and validated in this issue of *Novon* by C. F. Fang and A. K. Skvortsov.

Specimens of *Salix sinica* from northern and northeastern China have often been misidentified as *S. caprea*. However, the former species can be distinguished by its having filaments six to seven times longer than the bracts, ovaries longer than the pedicels, and often thick, pubescent leaves.

*Salix sinica* was invalidly proposed in the *Flora Reipublicae Popularis Sinicae* (Wang & Fang, 1984: 304) based on the then invalid *S. caprea* L. var. *sinica* K. S. Hao. Therefore, the valid publication of the combination is achieved only here. The species is currently recognized as having three varieties: var. *sinica*, var. *dentata*, and var. *subsessilia*.

#### KEY TO VARIETIES OF *SALIX SINICA*

- 1a. Ovary distinctly stipitate.
  - 2a. Leaf margins often entire or irregularly toothed; leaves cuneate at base and acute-acuminate at apex . . . . . var. *sinica*
  - 2b. Leaf margins often regularly toothed; leaves  $\pm$  rounded at base and often obtuse (rarely acute) at apex . . . . . var. *dentata*
- 1b. Ovary subsessile . . . . . var. *subsessilis*

**Salix sinica** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu var. **dentata** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, comb. nov. Basionym: *Salix caprea* L. var. *dentata* K. S. Hao ex C. F. Fang & Skvortsov, Novon 8: 467. 1998. TYPE: China. Hebei: Zhou County, Xiao Wutai Shan, H. W. Kuang 149 (holotype, PE).

This variety is based on *Salix caprea* L. var. *dentata* K. S. Hao, described among many other taxa without Latin diagnoses in Hao (1936), and validated in this issue of *Novon* by C. F. Fang and A. K. Skvortsov. It differs from variety *sinica* in having leaf margins often regularly toothed and leaves more or less rounded at the base and often obtuse (rarely acute) at the apex; it differs from variety *subsessilia* in having distinctly stipitate ovaries.

**Salix sinica** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu var. **subsessilis** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, comb. nov. Basionym: *Salix caprea* L. var. *subsessilis* K. S. Hao ex C. F. Fang & Skvortsov, *Novon* 8: 468. 1998. TYPE: China. Hebei: Yi County, Xiaowude Shan, *K. M. Liu 2405* (holotype, PE).

This variety is based on *Salix caprea* L. var. *subsessilis* K. S. Hao, described among many other taxa without Latin diagnoses in Hao (1936), and validated in this issue of *Novon* by C. F. Fang and A. K. Skvortsov. It differs from variety *sinica* and variety *dentata* in having subsessile ovaries.

**Salix spodiophylla** Handel-Mazzetti var. **liocarpa** (K. S. Hao ex C. F. Fang & Skvortsov) G. Zhu, stat. nov. Basionym: *Salix spodiophylla* f. *liocarpa* K. S. Hao ex C. F. Fang & Skvortsov, *Novon* 8: 469. 1998. TYPE: China. Sichuan: Yongning County, *Forrest 21263* (holotype, ?PE).

This variety is based on *Salix spodiophylla* f. *liocarpa* K. S. Hao, described among many other taxa without Latin diagnoses in Hao (1936), and validated in this issue of *Novon* by C. F. Fang and A. K. Skvortsov. It differs from variety *spodiophylla* in having glabrous ovaries.

**Salix suchowensis** Cheng ex G. Zhu, sp. nov. TYPE: China. Jiangsu: Nanjing, *J. L. Guo 89012* (holotype, NF).

This species is based on *Salix suchowensis* Cheng, which was incompletely described in *Scientia Silvae Sinica* (Cheng et al., 1963: 8). Two specimens, *J. L. Guo 89012* (♀) and *Cheng 20641* (♂),

were cited without the indication of a type. According to the *Code* (Greuter et al., 1994, Article 8.1, 37.1), the valid publication of the name is achieved here by the designation of the single specimen *J. L. Guo 89012* as the holotype. This specimen is in good condition and has the diagnostic characters of the species.

*Acknowledgments.* I thank Zhenfu Fang and Marshall R. Crosby for critical suggestions on the topic. I also thank Alexei Skvortsov, Nick Turland, William D'Arcy, and Tuoya Ding for many useful discussions. I am grateful to Xinfen Gao and Hong Song for help with the manuscript. Special thanks go to the staffs of A, CDBI, GH, IFP, KUN, PE, and SZ for the opportunities to work in these herbaria.

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